

WHAT IS CLAIMED IS:

1. A method of determining a relative speed between two separately driven members in an image forming apparatus, comprising the steps of:
 - transporting a print medium using a print media transport assembly including a first nip, said print media transport assembly operable at a first transport speed;
 - 5 driving a rotatable member associated with a second nip using an electric motor at a second transport speed which is independent from said first transport speed;
 - transferring the print medium between said first nip and said second nip;
 - detecting an electrical characteristic of said motor when the print medium is
 - 10 present in each of said first nip and said second nip; and
 - determining a relative speed between said first transport speed and said second transport speed.
2. The method of claim 1, including the steps of, prior to said determining step:
 - transporting an other print medium using said print media transport assembly at said first transport speed;
 - 5 driving said rotatable member using said electric motor at a third transport speed which is different from said second transport speed;
 - transferring the other print medium between said first nip and said second nip;
 - detecting said electrical characteristic of said motor when the print medium is present in each of said first nip and said second nip; and
 - 10 comparing said electrical characteristic from said second detecting step with said electrical characteristic from said first detecting step;
 - wherein said determining step is dependent upon said comparing step.
3. The method of claim 2, wherein said detecting steps include the substep of:
 - monitoring a pulse width modulation setting of said motor for each of said first detecting step and said second detecting step;
 - the method further includes a step of calculating a numerical analysis data fit
 - 5 using a rise in said pulse width modulation setting associated with each of said first detecting step and said second detecting step; and
 - wherein said determining step is dependent upon said calculated data fit.

4. The method of claim 3, wherein said data fit is a linear regression data fit.
5. The method of claim 1, including the step of setting said second transport speed at a predetermined value below said first transport speed.
6. The method of claim 5, wherein said second transport speed is set at a value which is approximately 0.75% less than said first transport speed.
7. The method of claim 1, wherein said detecting step includes the substeps of:
 - monitoring a pulse width modulation setting of said motor;
 - detecting a rise in said pulse width modulation setting associated with said
- 5 second transport speed being faster than said first transport speed.
8. The method of claim 7, including the further substep of setting a threshold value for said rise in pulse width modulation setting.
9. The method of claim 8, wherein said threshold value is set at an approximately 15% rise in said pulse width modulation setting.
10. The method of claim 1, wherein said detecting step includes the substep of monitoring one of a pulse width modulation setting of said motor, an electrical current supplied to said motor, and an encoder speed associated with said motor.
11. The method of claim 1, wherein said motor comprises one of a fuser motor located downstream from said first nip, and a bump-align motor located upstream from said first nip.
12. The method of claim 1, wherein said rotatable member comprises one of a fuser roll and a bump-align roll.
13. The method of claim 1, wherein said first nip is defined in part by a print media transport belt.
14. The method of claim 1, wherein said paper transport assembly and said rotatable member are mechanically decoupled.
15. A method of operating an image forming apparatus, comprising the steps of:
 - transporting a first print medium, comprising the substeps of:
 - transporting the first print medium using a print media transport
- 5 assembly at a first transport speed to a first nip;

transporting the first print medium to a second nip at a second transport speed associated with an electric motor, said second transport speed being independent from said first transport speed;

10 detecting an electrical characteristic of said motor when the first print medium is present in each of said first nip and said second nip; and

transporting a second print medium, comprising the substeps of:

transporting the second print medium using said print media transport assembly at said first transport speed to said first nip;

15 transporting the second print medium to said second nip at a third transport speed associated with said electric motor, said third transport speed being independent from said first transport speed;

detecting an electrical characteristic of said motor when the second print medium is present in each of said first nip and said second nip;

20 comparing said electrical characteristic from said second detecting step with said electrical characteristic from said first detecting step;

determining whether at least one of said second transport speed and said third transport speed is faster than said first transport speed.

16. The method of claim 15, wherein said detecting steps include the substeps of:

monitoring a pulse width modulation setting of said motor for each of said first detecting step and said second detecting step; and

5 calculating a numerical analysis data fit using a rise in said pulse width modulation setting associated with each of said first detecting step and said second detecting step; and

wherein said determining step is dependent upon said calculated data fit.

17. The method of claim 16, wherein said data fit is a linear regression data fit.

18. The method of claim 15, including the step of setting said second transport speed at a predetermined value below said first transport speed.

19. The method of claim 18, wherein said second transport speed is set at a value which is approximately 0.75% less than said first transport speed.

20. The method of claim 15, wherein said detecting steps include the substeps of:

monitoring a pulse width modulation setting of said motor; and
detecting a rise in said pulse width modulation setting.

21. The method of claim 20, including the further substep of setting a
threshold value for said rise in pulse width modulation setting.

22. The method of claim 21, wherein said threshold value is set at a 15% rise
in said pulse width modulation setting.

23. The method of claim 15, wherein said detecting step includes the substep
of monitoring one of a pulse width modulation setting of said motor, an electrical
current supplied to said motor, and an encoder speed associated with said motor.

24. The method of claim 15, wherein said motor comprises one of a fuser
motor located downstream from said first nip, and a bump-align motor located
upstream from said first nip.

25. The method of claim 15, further including a rotatable member defining
one of said first nip and said second nip, said rotatable member comprising one of a
fuser roll and a bump-align motor.

26. The method of claim 15, wherein said first nip is defined in part by a print
media transport belt.

27. A method of operating an electrophotographic printer, comprising the
steps of:

5 transporting a print medium through a first nip at a first transport speed using a
first rotatable member;

 driving a second rotatable member associated with a second nip using an
electric motor at a second transport speed which is independent from said first
transport speed;

10 transferring the print medium between said first nip and said second nip; and
 detecting an electrical characteristic of said motor when the print medium is
present in said second nip.